Y/TS-2031

BWXT Y-12
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Y-12 NATIONAL SECURITY COMPLEX

Y-12 GROUNDWATER PROTECTION PROGRAM MONITORING OPTIMIZATION PLAN FOR GROUNDWATER MONITORING WELLS AT THE U.S. DEPARTMENT OF ENERGY Y-12 NATIONAL SECURITY COMPLEX, OAK RIDGE, TENNESSEE

December 2006

Prepared by

ELVADO ENVIRONMENTAL LLC
Under Subcontract No. 4300048395

for the

Environmental Compliance Department
Environment, Safety, and Health Division
Y-12 National Security Complex
Oak Ridge, Tennessee 37831

Managed by

BWXT Y-12, L.L.C.
for the U.S. DEPARTMENT OF ENERGY
under contract No. DE-AC05-00OR22800

MANAGED BY
BWXT Y-12, L.L.C.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

UCN-13672 (11-03)

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CONTENTS

List of Figures

List of Tables

List of Acronyms and Abbreviations

Bear Creek Regime	Bear Creek Hydrogeologic Regime
BCV	Bear Creek Valley
BWXT	BWXT Y-12, L.L.C.
Chestnut Ridge Regime	Chestnut Ridge Hydrogeologic Regime
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
East Fork Regime	Upper East Fork Poplar Creek Hydrogeologic Regime
EMWMF	Environmental Management Waste Management Facility
GWPP	Groundwater Protection Program
LMES	Lockheed Martin Energy Systems, Inc.
MAROS	Monitoring and Remediation Optimization System
MCES	modified cost effective sampling
ORR	Oak Ridge Reservation
PCP	post-closure permit
RCRA	Resource Conservation and Recovery Act
SAP	sampling and analysis plan
SWDF	Solid Waste Disposal Facility
WRRP	Water Resources Restoration Program
Y-12	Y-12 National Security Complex

1.0 INTRODUCTION

This document is the monitoring optimization plan for groundwater monitoring wells associated with the U.S. Department of Energy (DOE) Y-12 National Security Complex (Y-12) in Oak Ridge, Tennessee (Figure A.1). The plan describes the technical approach that will be implemented under the Y-12 Groundwater Protection Program (GWPP) to focus available resources on the monitoring wells at Y-12 that provide the most useful hydrologic and water-quality monitoring data. The technical approach is based on the GWPP status designation for each well (Section 2.0). Under this approach, wells granted "active" status are used by the GWPP for hydrologic monitoring and/or groundwater quality sampling (Section 3.0), whereas wells granted "inactive" status are not used for either purpose. The status designation also defines the frequency at which the GWPP will inspect applicable wells, the scope of these well inspections, and extent of any maintenance actions initiated by the GWPP (Section 3.0). Details regarding the ancillary activities associated with implementation of this plan (e.g., well inspection) are deferred to the referenced GWPP plans and procedures (Section 4.0).

This plan applies to groundwater wells associated with Y-12 and related waste management areas and facilities located within three hydrogeologic regimes (Figure A.1): the Bear Creek Hydrogeologic Regime (Bear Creek Regime), the Upper East Fork Poplar Creek Hydrogeologic Regime (East Fork Regime), and the Chestnut Ridge Hydrogeologic Regime (Chestnut Ridge Regime). The Bear Creek Regime encompasses a section of Bear Creek Valley (BCV) immediately west of Y-12. The East Fork Regime encompasses most of the Y-12 process, operations, and support facilities in BCV and, for the purposes of this plan, includes a section of Union Valley east of the DOE Oak Ridge Reservation (ORR) boundary along Scarboro Road. The Chestnut Ridge Regime encompasses a section of Chestnut Ridge directly south of Y-12 that is bound on the west by a surface drainage feature (Dunaway Branch) and on the east by Scarboro Road. For this plan, the Chestnut Ridge Regime includes an area known as the South Campus Facility that is located west of Scarboro Road and south of Bethel Valley Road.

The GWPP maintains an extensive database of construction details and related information for the monitoring wells in each hydrogeologic regime (including wells that have been destroyed or intentionally plugged and abandoned); the most recent hardcopy version of the database was issued in February 2003 (BWXT Y-12, L.L.C. [BWXT] 2003). This plan does not apply to temporary piezometers or other specialized groundwater monitoring/sampling devices that have been or may be installed for research purposes, hydrologic tests, pilot studies, or short-term investigations.

This plan will be reviewed and updated every three years, as specified in the *Y-12 GWPP Management Plan* (BWXT 2004). Between scheduled updates of this plan, addenda issued by the GWPP Manager (or authorized designee) will document any substantial changes or modifications to the plan, including changes in the GWPP status designation for each monitoring well identified in the plan. The addenda, numbered in consecutive ascending order, will be forwarded to all personnel included on the distribution list for this plan. The addenda are inserted in Appendix C pending the next scheduled update of the plan, which will incorporate the information included in the addenda.

2.0 MONITORING WELL STATUS

For the purposes of this plan, the existing groundwater monitoring wells at Y-12 are assigned active status (Table B.1) or inactive status (Table B.2) in accordance with the decision-based process shown on Figure A.2. Although the wells granted either status may be functionally suitable for hydrologic monitoring and groundwater sampling, only wells granted active status will be used for either purpose by the GWPP.

The network of wells in each hydrogeologic regime that are granted active status under the GWPP (see Section 2.1) reflect the findings of an independent assessment of the GWPP, completed in December 2005, which included quantitative evaluations performed using the Monitoring and Remediation Optimization System (MAROS) software (BWXT 2005). These quantitative evaluations are intended to identify areas where high uncertainty about groundwater quality warrants installation of new wells or additional monitoring ("well sufficiency" analysis) and to evaluate the relative significance of each well location based on the spatial distribution of neighboring wells ("well redundancy" analysis). Findings of the "well sufficiency" analyses do not recommend installation of new wells at Y-12. However, results of the "well redundancy" analyses support decisions to discontinue the future collection of groundwater quality samples from a total of 122 wells, most of which (86 wells) were granted inactive status under the GWPP (see Section 2.2).

The designated status of each well will not change unless warranted by future circumstances and approved by the GWPP Manager. For example, a well that currently is granted inactive status may be used to replace a nearby well granted active status that has been irreparably damaged or destroyed. Whenever a change in the status of a well is warranted, the GWPP Manager (or authorized designee) will issue an addendum to this plan that identifies the well and the reason(s) for the change in status.

2.1 ACTIVE STATUS

Active status under the GWPP, based on one or more of the considerations described in the following subsections, is granted to a total of 362 wells at Y-12 (Table B.1), including 135 wells designated for use in one or more regulatory monitoring programs; 164 wells that specifically address surveillance monitoring requirements of DOE Order 450.1 *Environmental Protection Program*; and 224 wells used to monitor groundwater surface elevations. Note that about 40% of the wells granted active status meet more than one of the criteria mentioned above (Table B.1). The geographic distribution of the wells that are granted active status generally mirrors the current network of existing wells, with 143 of the wells located within the Bear Creek Regime (Figure A.3), 133 of the wells located within the East Fork Regime (Figure A.4), and 86 of the wells located within the Chestnut Ridge Regime (Figure A.5).

Active status under the GWPP also will be granted to any newly installed well that meets the design and construction standards described in the *Monitoring Well Installation Plan for the Department of Energy Y-12 Plant* (Lockheed Martin Energy Systems, Inc. [LMES] 1997) and serves an ongoing regulatory monitoring program or provides data suited to the technical purposes or programmatic objectives of the GWPP. New wells that do not meet these criteria will be granted inactive status. In either case, new wells installed at Y-12 will be incorporated into this plan from addenda issued by the GWPP Manager (or authorized designee).

The MAROS evaluation of the GWPP, including the "well redundancy" and "well sufficiency" analyses of all wells granted active status, may be performed whenever this plan is updated in accordance with the schedule noted in Section 1.0. The updated version of the plan will incorporate the findings and

recommendations of the most recent MAROS evaluation of the GWPP, including MAROS-based recommendations for discontinued sampling of specified wells (see Section 3.2).

2.1.1 Regulatory Monitoring Programs

Active status is granted to each groundwater monitoring well that is identified in the current respective Resource Conservation and Recovery Act (RCRA) post-closure permit (PCP) for the Bear Creek Regime, East Fork Regime, and Chestnut Ridge Regime. Each respective PCP defines the requirements for RCRA post-closure groundwater monitoring at the specified sites in the corresponding hydrogeologic regime. Collectively, the PCPs designate a total of 61 wells for RCRA post-closure detection monitoring and RCRA post-closure corrective action monitoring (Table B.1), including 25 wells located in the Bear Creek Regime, nine wells located in the East Fork Regime, and 27 wells located in the Chestnut Ridge Regime.

Active status is granted to each groundwater monitoring well that is specified in a Comprehensive Environmental Response, Liability, and Compensation Act (CERCLA) interim/final record of decision or the related decision document(s) for applicable facilities at Y-12. Currently, 74 wells serve CERCLA-related groundwater monitoring purposes (Table B.1), including 25wells located in the Bear Creek Regime, 36 wells located in the East Fork Regime, and 13 wells located in the Chestnut Ridge Regime (Bechtel Jacobs Company LLC 2006). Twelve of these wells, four wells in each of the regimes, also are listed in the respective PCPs (Table B.1). Note that the CERCLA wells located in the Bear Creek Regime include those used for groundwater quality monitoring at the Environmental Management Waste Management Facility (EMWMF).

Active status is granted to the 21 wells designated for SWDF detection monitoring at the following active and closed nonhazardous solid waste landfills located within the Chestnut Ridge Regime (Table B.1): Industrial Landfill II, Industrial Landfill IV, Industrial Landfill V, Construction/Demolition Landfill VI, and Construction/Demolition Landfill VII. Of the wells designated for SWDF detection monitoring, six wells also are listed in the PCP for the Chestnut Ridge Regime and three wells meet CERCLA monitoring requirements.

Ongoing RCRA-, CERCLA-, and SWDF-related groundwater sampling and analysis activities in each hydrogeologic regime at Y-12 are not implemented under the GWPP. Nevertheless, all the monitoring programs employ technically equivalent groundwater sampling methods and laboratory analytical procedures. Consequently, the field and laboratory data obtained for the regulatory monitoring programs meet the data quality objectives of the GWPP, as defined in the most recent version of the *Y-12 GWPP Data Management Plan* (BWXT 2006a).

2.1.2 DOE Order 450.1 Surveillance Monitoring

Active status is granted to each well at Y-12 that meets the requirements of an integrated site-wide groundwater surveillance monitoring program required under DOE Order 450.1 to address all areas that are, or could be, affected by site operations. In accordance with recent technical guidance issued by DOE, the DOE Order 450.1 surveillance monitoring program implemented under the GWPP: (1) maintains surveillance of existing and potential groundwater contamination sources at Y-12 and provides for early detection of contaminant releases; (2) determines the quality of groundwater (and surface water) where contaminants from sources at Y-12 are most likely to migrate beyond the ORR boundary; and (3) identifies and characterizes

long-term trends in groundwater quality at Y-12 (DOE 2006). The regulatory monitoring programs described in the preceding section achieve these objectives for several of the principal sources of groundwater contamination at Y-12. In order to ensure that these objectives also are achieved in areas and sites at Y-12 that the regulatory monitoring programs do not address, 69 of the active wells in the Bear Creek Regime, 83 of the active wells in the East Fork Regime, and 12 of the active wells in the Chestnut Ridge Regime are designated as suitable for DOE Order 450.1 surveillance monitoring (Table B.1). The annual sampling and analysis plan (SAP) issued by the GWPP identifies the wells in each regime that are scheduled for sampling for the purposes of DOE Order 450.1 surveillance monitoring.

2.1.3 Hydrologic Monitoring

Active status is granted to each groundwater monitoring well that is part of the respective regime-wide network of wells used for monitoring groundwater surface elevations in the Bear Creek Regime, East Fork Regime, and Chestnut Ridge Regime. Section 3.1 provides details regarding the hydrologic monitoring wells in each regime. Using fixed networks of hydrologic monitoring wells in each regime ensures that the GWPP obtains adequate, equivalent, consistent, and representative groundwater elevation data.

2.1.4 Qualitative Review

Regardless of the other applicable criteria, active status may be granted to any well at Y-12 that, based on qualitative evaluation by the GWPP Manager, is considered suitable for the technical purposes and/or programmatic objectives of the GWPP. For instance, although discontinued sampling may be indicated by results of the MAROS-based analysis of the optimum groundwater sampling frequency for a well that is granted active status under the GWPP (see Section 3.2), the GWPP Manager may elect to retain the active status designation for the well.

2.2 INACTIVE STATUS

Inactive status under the GWPP currently is granted to 185 groundwater wells at Y-12 (Table B.2). Note that this total does not include 141 wells located in western Bear Creek Valley that had been granted inactive status under the GWPP before organizational stewardship responsibility for the wells was relinquished in February 2006. Wells that are granted inactive status fall under one of the following generalized groups:

- Wells for which the design and construction details are unknown or do not meet the technical standards of the GWPP, or wells that do not meet other GWPP requirements (e.g., all-weather access).

- Wells for which groundwater quality and hydrologic monitoring data are not available or needed.

- Wells that are not located hydraulically downgradient of any facility associated with Y-12 and/or any confirmed or potential source(s) of groundwater contamination.

- Wells that are known to yield uncontaminated groundwater hydraulically downgradient of a facility associated with Y-12, and/or any confirmed or potential source(s) of groundwater contamination, but do not provide unique monitoring coverage.

- Wells for which the results of the MAROS-based analysis of the optimum groundwater sampling frequency recommend discontinued sampling under the GWPP (Figure A.2), excluding wells that are determined by the GWPP Manager to serve the technical or programmatic purposes of the GWPP.

3.0 MONITORING WELL UTILIZATION

As described in the following subsections, each groundwater monitoring well at Y-12 that is granted active status under the GWPP is generally suitable for hydrologic monitoring and/or groundwater quality sampling. To ensure their continued use for either purpose, the wells will be appropriately inspected and maintained, with more frequent inspection and proactive maintenance focused on wells granted active status.

3.1 HYDROLOGIC MONITORING

A total of 224 wells at Y-12 that are granted active status under the GWPP are designated for hydrologic monitoring, including 85 wells in the Bear Creek Regime (Table B.3), 62 wells in the East Fork Regime (Table B.4), and 77 wells in the Chestnut Ridge Regime (Table B.5). The respective network of hydrologic monitoring wells in each regime provides the geographic coverage needed to determine regime-wide groundwater surface elevations, evaluate localized groundwater flow patterns, and calculate representative horizontal and vertical hydraulic gradients. Note that many of these wells also serve the groundwater quality sampling purposes of one or more regulatory monitoring programs and/or DOE Order 450.1 surveillance monitoring (Table B.1).

The elevation of the groundwater surface throughout the Bear Creek Regime, East Fork Regime, and Chestnut Ridge Regime will be determined at least annually based on the depth-to-water measurements recorded for the hydrologic monitoring wells in each regime. The depth to water in each well will be measured in accordance with the most recent approved version of the applicable GWPP technical procedure or a functionally equivalent technical procedure. Annual depth-to-water measurements will be performed during alternating wet (winter and spring) and dry (summer and fall) seasonal flow conditions. To ensure the most contemporaneous regime-wide data, measurements of the depth to water in all of the hydrologic monitoring wells in each regime will be completed in the shortest time practical.

3.2 GROUNDWATER QUALITY SAMPLING

The MAROS evaluation of the GWPP, in addition to the "well sufficiency" and "well redundancy" analyses (see Section 2.0), uses a modified cost effective sampling (MCES) method to determine the lowest-frequency sampling schedule that will continue to provide information needed for surveillance monitoring, regulatory, and remedial action decision-making (BWXT 2005). The evaluation was performed using data obtained from January 1996 through December 2004, which were determined to be the highest quality data available (i.e., results for all analytes meet the most stringent data quality objectives). Groundwater monitoring data from other programs (e.g., RCRA, CERCLA, SWDF) were included in the MAROS evaluation to obtain the best representation of water quality monitoring performed at Y-12. The evaluation provided one of the following sampling frequency recommendations for each well in the study: quarterly, semiannual, annual, biennial, review, or remove (Table B.1). The MAROS-based sampling frequency, as provided in this plan, applies only to sampling performed under the GWPP and does not supplant or replace the sampling frequency specified by the governing regulatory program. Note that many of the active wells were excluded from the evaluation because insufficient data were available (less than four samples collected between 1996 and 2004).

Currently, 164 of the 362 wells at Y-12 that are granted active status are designated for groundwater quality sampling under the GWPP (Table B.1), including some wells that are alternate wells listed in RCRA PCPs and/or used for hydrologic monitoring. Although based on results of the MCES analysis, the current sampling frequency for each well reflects the results of a subsequent evaluation of each MAROS recommendation, which was performed and/or approved by the GWPP manager. This final evaluation also assigned "even" or "odd" as the sampling year for the wells with a biennial sampling frequency (Table B.1). A total of 28 wells selected for groundwater quality sampling have not been assigned a sampling frequency by the GWPP and are classified as "to be determined" (Table B.1). The sampling frequency for these wells, which include 11 wells omitted from the MAROS evaluation and wells with MAROS recommendations of review (10 wells), remove (four wells), or sample (three wells), will be determined within the next few years.

The frequency at which groundwater samples are collected from wells specifically to meet requirements of DOE Order 450.1 surveillance monitoring also is identified in the annual SAP issued by the GWPP. As recommended by the MAROS evaluation and defined in the annual SAP, each groundwater sample will be analyzed for a standard suite of parameters. Only unfiltered groundwater quality samples are collected for the purposes of the GWPP; filtered samples are obtained only if specifically requested by the GWPP Manager (or authorized designee). All sampling and related field activities (e.g., depth-to-water measurements) are performed in accordance with the methods described in the GWPP technical procedures, or functionally equivalent technical procedures used by other organizations responsible for implementation of the regulatory monitoring programs at Y-12.

The groundwater monitoring results obtained each year are evaluated in the annual Groundwater Monitoring Report (GWMR) issued by the GWPP. Based on the results of the annual evaluations, the GWMR may contain recommendations to alter the sampling frequency for monitoring wells. Any recommended changes will be evaluated by the GWPP manager and, if approved, will be reflected in the subsequent annual SAP issued by the GWPP.

As described in Section 2.1, another MAROS evaluation of the GWPP may be performed whenever this plan is updated in accordance with the schedule noted in Section 1.0. Input data from a minimum of four sampling events (since January 1996) are needed to provide adequate confidence in results of the MCES analysis. For each well with the minimum number of groundwater sampling events, the MCES method will assign a quarterly, semiannual, annual, biennial, or discontinued groundwater sampling frequency. The updated version of this plan will incorporate the findings and recommendations of the most recent MAROS evaluation of the GWPP, including MAROS-based recommendations for discontinued sampling of specified wells.

3.3 INSPECTION AND MAINTENANCE

Groundwater wells at Y-12 are regularly inspected and actively maintained to ensure that they continue to yield representative hydrologic and water-quality monitoring data. For the purposes of the GWPP, the active or inactive status designation for each well determines the frequency at which the GWPP will inspect the applicable wells, the scope of these inspections, and the extent of maintenance response actions. Inspection and maintenance activities will be performed in accordance with the most recent version of the *Y-12 GWPP Monitoring Well Inspection and Maintenance Plan* (BWXT 2006b), which applies only to the wells for which BWXT assumes organizational responsibility under the GWPP. Other organizations retain responsibility for the wells that are used for RCRA-, CERCLA-, and SWDF-related groundwater monitoring, with respective inspection and maintenance requirements defined and/or referenced in the PCP for each hydrogeologic

regime, the applicable CERCLA decision documents and related technical reports, and the operating permit or post-closure plan for the corresponding SWDF (see Section 2.1).

Wells granted active status under the GWPP will be inspected annually. During each inspection, the security status (locked or unlocked well cap) of each well will be verified and the applicable above-ground components of the each well (identification tag, cap, lock hasp, lock, concrete pad, and protective posts) will be assessed for visible damage, deterioration, and functionality. All-weather access to each well also will be evaluated during the annual inspection. Every three years, as a qualitative check on down-hole conditions in each well, the total depth to the bottom of the well will be measured and compared to the Reference Tag Depth for the well (BWXT 2006c). Based on the outcome of each inspection, the GWPP Manager will initiate the necessary and appropriate maintenance actions needed to ensure the access, security, physical condition, and performance of the applicable well(s).

Wells granted inactive status under the GWPP will be inspected once every three years. During each inspection, the security status of each well will be verified; the applicable above-ground components of each well will be assessed for visible damage, deterioration, and functionality; and the total depth to the bottom of each well will be measured and compared to the Reference Tag Depth for the well (BWXT 2006c). Based on the outcome of each inspection, the GWPP Manager will initiate only those maintenance actions needed to ensure the security and identification of each well, such as replacement of inoperable well locks and identification tags.

4.0 REFERENCES

Bechtel Jacobs Company LLC. 2006. *Sampling and Analysis Plan for the Water Resources Restoration Program for Fiscal Year 2007 Oak Ridge Reservation, Oak Ridge, Tennessee*. Prepared by Science Applications International Corporation (BJC/OR-2518).

BWXT Y-12 L.L.C. 2003. *Updated Subsurface Data Base for Bear Creek Valley, Chestnut Ridge, and Parts of Bethel Valley on the U.S. Department of Energy Oak Ridge Reservation.* Prepared by the Y-12 Environment, Safety, and Health Division (Y/TS-881/R5).

BWXT Y-12 L.L.C. 2004. *Groundwater Protection Program Management Plan for the U.S. Department of Energy Y-12 National Security Complex, Oak Ridge, Tennessee.* Prepared by AJA Technical Services, Inc. (Y/SUB/01-006512/2/R1).

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APPENDIX A

FIGURES

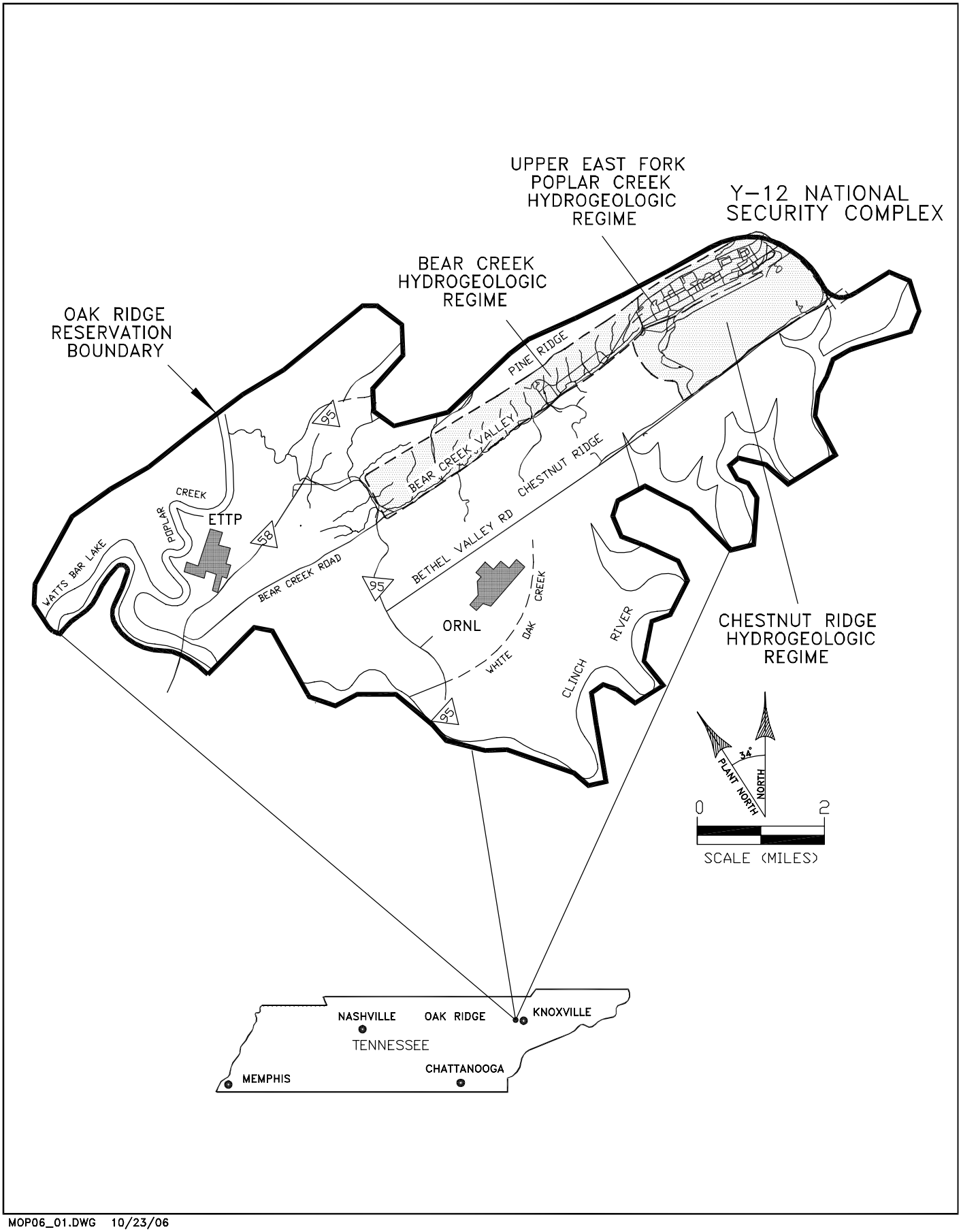

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Fig. A.1. Hydrogeologic regimes at the Y-12 National Security Complex.

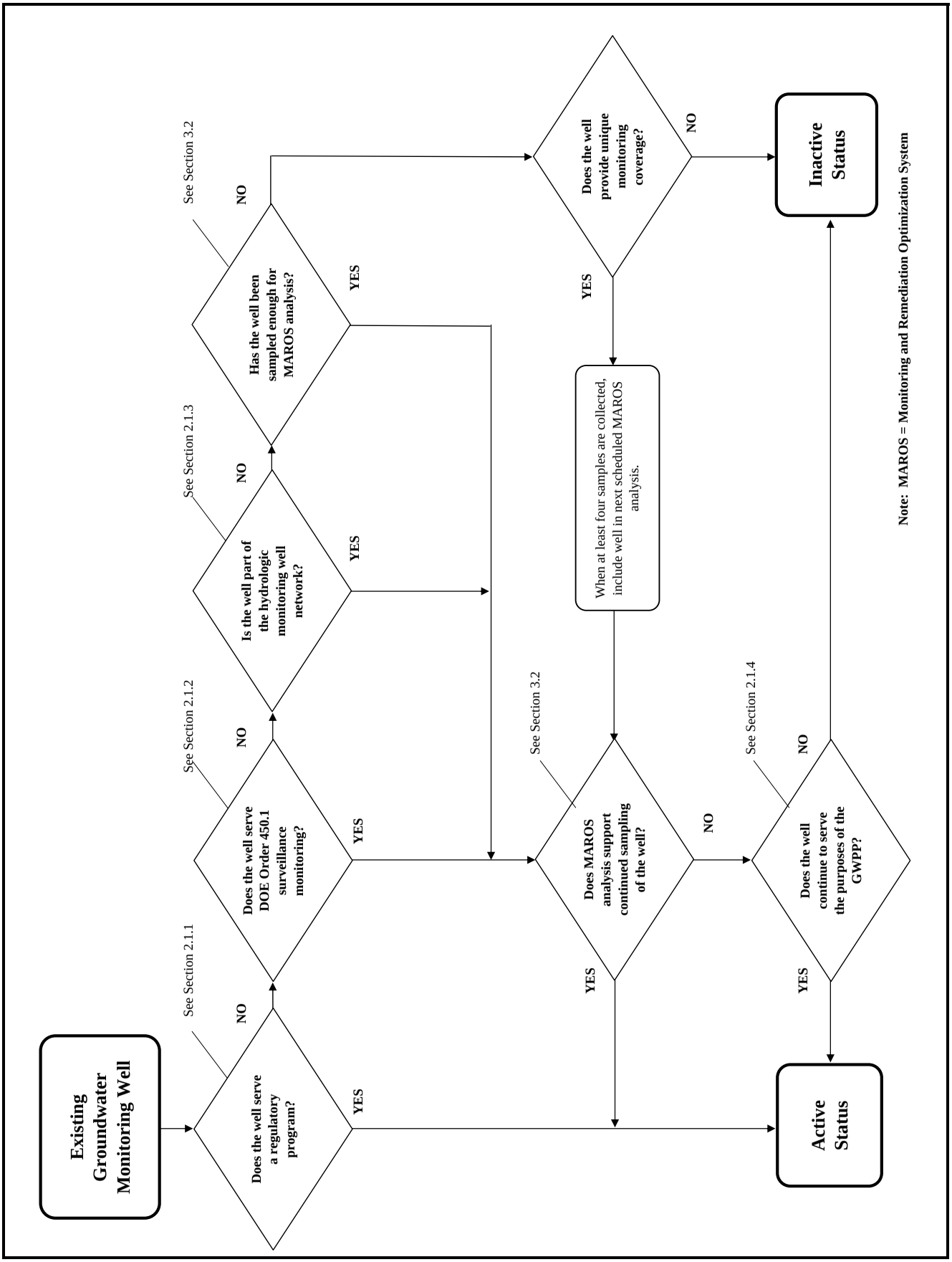
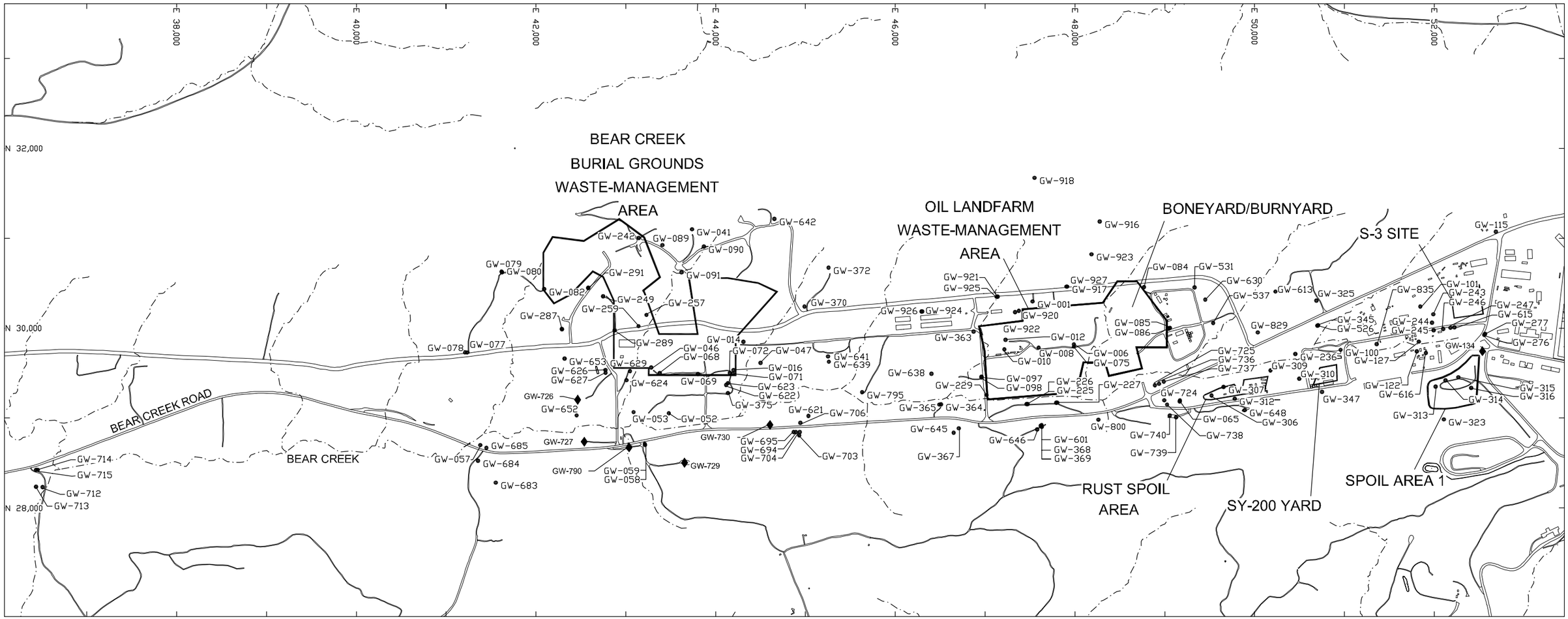


Fig. A.2. Process used to designate the status of groundwater monitoring wells at the Y-12 National Security Complex.



EXPLANATION

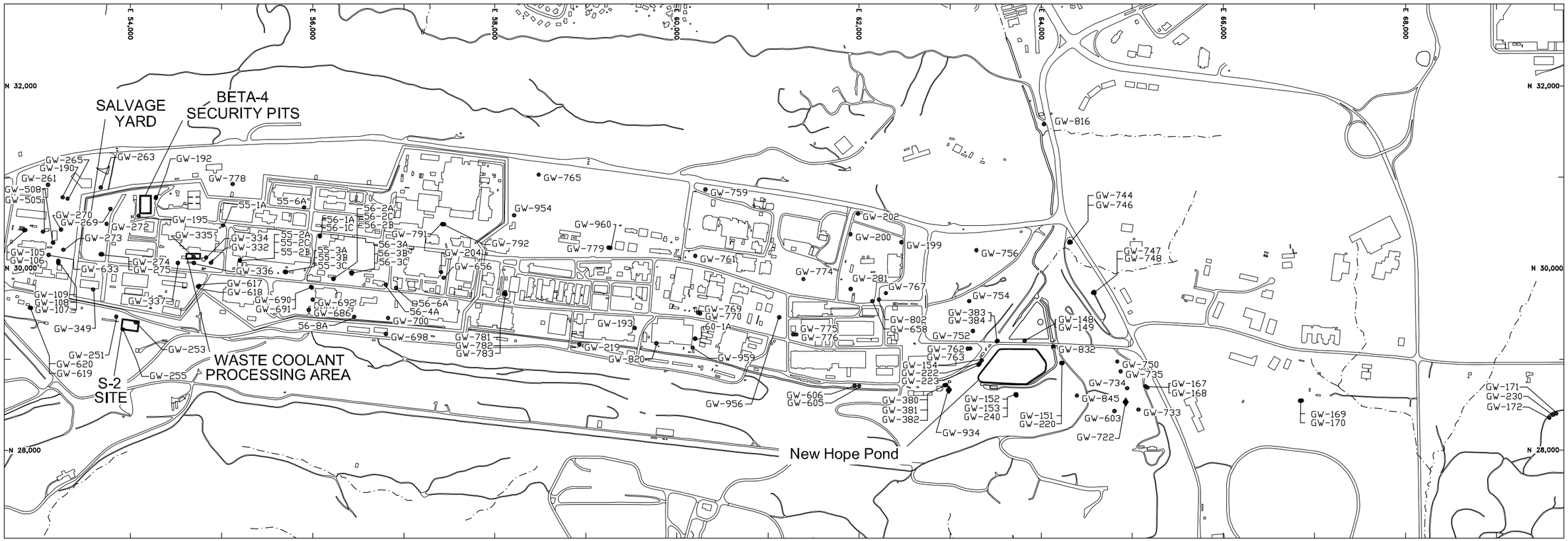
- Active groundwater monitoring well
- Active Westbay groundwater monitoring well
- Surface drainage feature
- Principal Waste Management Sites

PLANT NORTH
34°
NORTH

0 1100
SCALE (ft)

MOP06_3 10/16/06

Fig.A.3. Locations of groundwater monitoring wells in the Bear Creek Hydrogeologic Regime that are granted active status under the Y-12 Groundwater Protection Program.



EXPLANATION

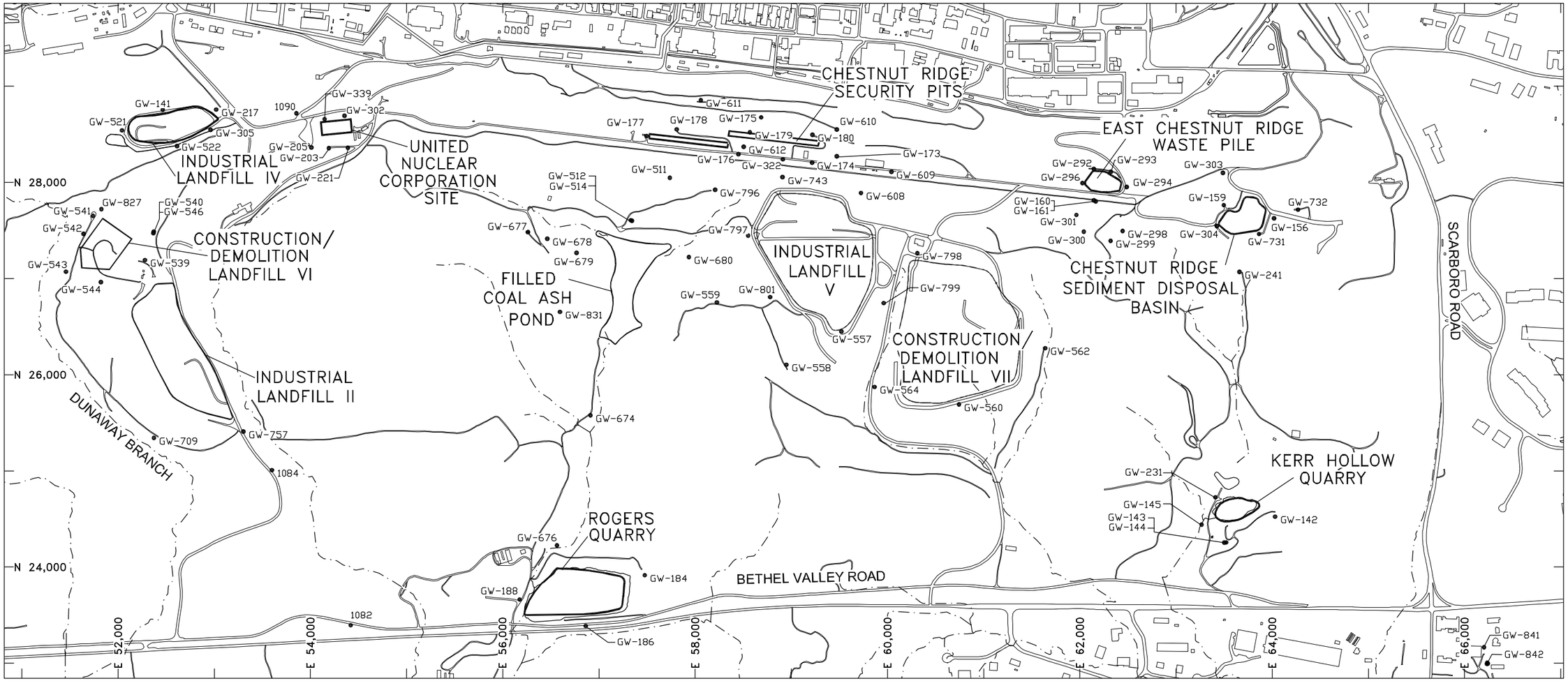
- Active groundwater monitoring well
- Active Westbay groundwater monitoring well
- Surface drainage feature
- Principal Waste Management Sites

PLANT NORTH
34°
NORTH

0 1100
SCALE (ft)

MOP06_4 12/11/06

Fig.A.4. Locations of groundwater monitoring wells in the Upper East Fork Poplar Creek Hydrogeologic Regime that are granted active status under the Y-12 Groundwater Protection Program.



EXPLANATION

- Active groundwater monitoring well
- Surface drainage feature
- Principal Waste Management Sites

PLANT NORTH
34°
NORTH

0 1100
SCALE (ft)

MOP06_5 12/11/06

Fig.A.5. Locations of groundwater monitoring wells in the Chestnut Ridge Hydrogeologic Regime that are granted active status uner the Y-12 Groundwater Protection Program.

APPENDIX B

TABLES

Table B.1. Groundwater monitoring wells that are granted active status under the Y-12 Groundwater Protection Program

Well	Regime [1]	Active Status Criteria			GWPP Sampling Frequency [3]	Monitoring Criteria						MAROS Evaluation [6]
		Reg. [2] Program	DOE Order	Hydro-logic		Contamination [4]					Unique Char. [5]	
						N	U	V	A	B		
1082	CR			X								
1084	CR			X								
1090	CR	C		X								
55-1A	EF		X	X	Annual	X						Review
55-2A	EF		X		Semiannual	X		X				-
55-2B	EF		X		Semiannual	X		X				Semiannual
55-2C	EF		X		Annual	X		X				Annual
55-3A	EF		X	X	Semiannual			X				-
55-3B	EF		X		Semiannual			X				-
55-3C	EF		X		Semiannual			X				-
55-6A	EF		X	X	TBD (3)						X	-
56-1A	EF		X	X	Semiannual						X	-
56-1C	EF		X		TBD (1)						X	-
56-2A	EF		X	X	Annual			X				Review
56-2B	EF		X		Annual			X				Review
56-2C	EF		X		Annual			X				Annual
56-3A	EF		X		Semiannual			X				-
56-3B	EF		X		Semiannual			X				-
56-3C	EF		X		Semiannual			X				-
56-4A	EF		X		Semiannual			X				-
56-6A	EF		X		Semiannual						X	-
56-8A	EF		X	X	Semiannual			X				-
60-1A	EF		X	X	Semiannual						X	-
GW-001	BC			X								
GW-006	BC		X		TBD (8)			X				Review
GW-008	BC	R		X				X				
GW-010	BC	R *		X				X				
GW-012	BC	R *		X								
GW-014	BC	R *	X	X	Semiannual			X				Semiannual
GW-016	BC			X								
GW-041	BC			X								
GW-046	BC	R		X				X				
GW-047	BC			X								
GW-052	BC		X	X	Odd	X	X		X			Review
GW-053	BC		X	X	Odd			X				Biennial
GW-057	BC			X								
GW-058	BC		X		Even		X		X			Review
GW-059	BC			X								
GW-065	BC		X	X	TBD (0)						X	-
GW-068	BC		X		Even			X				Review
GW-069	BC	R *		X								
GW-071	BC	R *	X		Semiannual			X				Semiannual
GW-072	BC		X		Odd			X				Remove
GW-075	BC	R *										
GW-077	BC	C										
GW-078	BC	C		X								
GW-079	BC	C										
GW-080	BC	C		X								
GW-082	BC	R *	X	X	Annual			X				Semiannual
GW-084	BC			X								
GW-085	BC		X		Semiannual	X				X		Semiannual
GW-086	BC			X								

Table B.1 (continued)

Well	Regime [1]	Active Status Criteria			GWPP Sampling Frequency [3]	Monitoring Criteria						MAROS Evaluation [6]
		Reg. [2] Program	DOE Order	Hydro-logic		Contamination [4]					Unique Char. [5]	
						N	U	V	A	B		
GW-089	BC		X		Odd			X				Review
GW-090	BC			X								
GW-091	BC			X								
GW-097	BC			X				X				
GW-098	BC		X		Annual			X				Annual
GW-100	BC		X	X	Odd	X						Annual
GW-101	BC	R *	X	X	Odd	X						Annual
GW-105	EF		X	X	Annual	X						Annual
GW-106	EF		X		Annual	X						Annual
GW-107	EF			X		X						
GW-108	EF	R		X		X		X	X	X		
GW-109	EF	R *	X		Annual	X		X		X		Semiannual
GW-115	BC			X								
GW-122	BC		X		Annual	X						Review
GW-127	BC	R *	X	X	Odd						X	Annual
GW-134	BC		X		TBD (2)	X		X		X	WB (10)	Remove
GW-141	CR	S		X								
GW-142	CR			X								
GW-143	CR	R / C										
GW-144	CR	R / C		X								
GW-145	CR	R / C		X								
GW-148	EF		X	X	Even			X				Remove
GW-149	EF	C (wl)										
GW-151	EF	C		X				X				
GW-152	EF	C		X								
GW-153	EF	C	X		Annual			X				Annual
GW-154	EF	C		X			X		X	X		
GW-156	CR	R		X								
GW-159	CR	R		X								
GW-160	CR			X								
GW-161	CR	R										
GW-167	EF			X								
GW-168	EF	C (wl)										
GW-169	EF	C		X								
GW-170	EF	C						X				
GW-171	EF	C										
GW-172	EF	C										
GW-173	CR		X	X	TBD (2)			X				Review
GW-174	CR		X	X	Odd			X				Review
GW-175	CR	R *	X	X	Even			X				Annual
GW-176	CR		X	X	Odd			X				Review
GW-177	CR	R		X				X				
GW-178	CR		X	X	Even			X				Remove
GW-179	CR		X	X	Odd			X				Review
GW-180	CR		X	X	Odd			X				Review
GW-184	CR			X								
GW-186	CR			X								
GW-188	CR			X								
GW-190	EF		X		TBD (2)						X	Review
GW-192	EF		X	X	Annual			X				Annual
GW-193	EF	R		X								
GW-195	EF			X								

Table B.1 (continued)

Well	Regime [1]	Active Status Criteria			GWPP Sampling Frequency [3]	Monitoring Criteria						MAROS Evaluation [6]
		Reg. [2] Program	DOE Order	Hydro-logic		Contamination [4]					Unique Char. [5]	
						N	U	V	A	B		
GW-199	EF			X								
GW-200	EF			X								
GW-202	EF			X								
GW-203	CR	C		X								
GW-204	EF		X	X	Annual		X		X	X		Biennial
GW-205	CR	C		X						X		
GW-217	CR	S		X								
GW-219	EF		X	X	Odd		X		X	X		-
GW-220	EF	C	X		Semiannual			X				-
GW-221	CR	C		X								
GW-222	EF		X		TBD (8)		X	X	X			Annual
GW-223	EF	C					X	X	X			
GW-225	BC		X		Semiannual	X		X				Semiannual
GW-226	BC		X	X	Semiannual	X		X				Semiannual
GW-227	BC		X	X	Even		X	X	X			Review
GW-229	BC		X	X	Annual		X	X	X	X		Annual
GW-230	EF	C						X				
GW-231	CR	R / C		X								
GW-236	BC		X	X	Odd	X				X		Annual
GW-240	EF		X		Annual			X				Annual
GW-241	CR			X								
GW-242	BC		X	X	TBD (5)			X				Review
GW-243	BC	R *				X	X	X	X	X		
GW-244	BC	R *				X		X		X		
GW-245	BC	R *		X		X	X	X		X		
GW-246	BC	R *	X		Semiannual	X	X	X	X	X		Semiannual
GW-247	BC	R *						X		X		
GW-249	BC			X								
GW-251	EF		X	X	Annual	X		X				Annual
GW-253	EF	R / C		X		X		X	X			
GW-255	EF			X								
GW-257	BC	R *	X	X	Annual			X				Semiannual
GW-259	BC		X		Even			X				Review
GW-261	EF			X								
GW-263	EF			X								
GW-265	EF		X		Semiannual			X				Review
GW-269	EF		X		Semiannual			X				Review
GW-270	EF		X		Odd	X						Review
GW-272	EF		X		Odd	X	X				X	Review
GW-273	EF		X		Odd			X				Review
GW-274	EF	R *	X		Annual	X	X			X		Annual
GW-275	EF	R *	X		Annual	X						Annual
GW-276	BC	R		X		X	X	X	X	X		
GW-277	BC		X		Odd	X		X		X		Review
GW-281	EF	C										
GW-287	BC			X								
GW-289	BC	R *	X	X	Annual			X				Semiannual
GW-291	BC	R *	X	X	TBD (6)			X				Annual
GW-292	CR	R		X								
GW-293	CR	R										
GW-294	CR	R										
GW-296	CR	R										

Table B.1 (continued)

Well	Regime [1]	Active Status Criteria			GWPP Sampling Frequency [3]	Monitoring Criteria						MAROS Evaluation [6]
		Reg. [2] Program	DOE Order	Hydro-logic		Contamination [4]					Unique Char. [5]	
						N	U	V	A	B		
GW-298	CR	R		X								
GW-299	CR			X								
GW-300	CR			X								
GW-301	CR	R		X								
GW-302	CR			X								
GW-303	CR			X								
GW-304	CR			X								
GW-305	CR	S / C		X				X				
GW-306	BC		X		TBD (0)			X				Review
GW-307	BC		X	X	Odd			X				Review
GW-309	BC		X	X	Even	X		X				Review
GW-310	BC		X	X	Even			X				Review
GW-312	BC		X		Even			X				Review
GW-313	BC		X		Odd			X				Review
GW-314	BC		X		TBD (0)	X		X				Review
GW-315	BC		X		Annual			X				Annual
GW-316	BC			X								
GW-322	CR		X	X	Even			X				Review
GW-323	BC			X								
GW-325	BC			X								
GW-332	EF		X		Annual			X				Annual
GW-334	EF			X				X				
GW-335	EF			X								
GW-336	EF		X		Annual			X				Annual
GW-337	EF		X		Annual			X				Annual
GW-339	CR			X								
GW-345	BC			X								
GW-347	BC			X								
GW-349	EF			X								
GW-363	BC	R / C										
GW-364	BC			X				X				
GW-365	BC		X		Even			X				Review
GW-367	BC		X		Even			X				Review
GW-368	BC		X		Odd			X				Review
GW-369	BC		X		Odd	X		X				Review
GW-370	BC			X								
GW-372	BC			X								
GW-380	EF	C		X								
GW-381	EF	C	X		Annual			X				-
GW-382	EF	C						X				
GW-383	EF	C	X	X	Semiannual			X				-
GW-384	EF	C (wl)										
GW-505	EF		X		Odd				X			Review
GW-508	EF		X		TBD (0)			X				-
GW-511	CR			X								
GW-512	CR			X								
GW-514	CR	R *	X		Even						X	Biennial
GW-521	CR	R / S		X								
GW-522	CR	S		X								
GW-526	BC		X		TBD (17)	X						-
GW-531	BC		X	X	TBD (0)						X	Remove
GW-537	BC		X	X	Annual	X				X		Annual

Table B.1 (continued)

Well	Regime [1]	Active Status Criteria			GWPP Sampling Frequency [3]	Monitoring Criteria						MAROS Evaluation [6]
		Reg. [2] Program	DOE Order	Hydro-logic		Contamination [4]					Unique Char. [5]	
						N	U	V	A	B		
GW-539	CR			X								
GW-540	CR	S										
GW-541	CR			X								
GW-542	CR	S		X								
GW-543	CR	S		X								
GW-544	CR	S		X								
GW-546	CR			X								
GW-557	CR	R / S		X								
GW-558	CR			X								
GW-559	CR			X								
GW-560	CR	S		X								
GW-562	CR	R / S		X								
GW-564	CR	S		X								
GW-601	BC		X		Odd	X		X				Review
GW-603	EF			X								
GW-605	EF	R / C		X			X	X	X			
GW-606	EF	R / C		X		X		X				
GW-608	CR	R *	X	X	TBD (22)						X	Annual
GW-609	CR	R *	X	X	Even						X	Annual
GW-610	CR			X								
GW-611	CR			X								
GW-612	CR		X	X	Annual			X				Annual
GW-613	BC			X								
GW-615	BC	R *	X		Annual	X	X	X	X	X		Semiannual
GW-616	BC		X		Annual	X						Annual
GW-617	EF		X	X	Even						X	Biennial
GW-618	EF	C						X				
GW-619	EF		X	X	Even			X				Biennial
GW-620	EF		X		Annual			X				Annual
GW-621	BC			X								
GW-622	BC			X								
GW-623	BC		X		TBD (0)			X				Review
GW-624	BC		X	X	TBD (6)			X				Review
GW-626	BC		X	X	Semiannual			X				Semiannual
GW-627	BC		X		Semiannual			X				Semiannual
GW-629	BC		X		Even			X				Biennial
GW-630	BC			X								
GW-633	EF		X		Even	X		X		X		Biennial
GW-638	BC			X								
GW-639	BC	C										
GW-641	BC			X								
GW-642	BC			X								
GW-645	BC			X								
GW-646	BC			X								
GW-648	BC		X	X	TBD (0)						X	Remove
GW-652	BC			X								
GW-653	BC		X	X	Annual			X				Annual
GW-654	BC			X								
GW-656	EF		X		Annual			X				Annual
GW-658	EF	C						X				
GW-674	CR			X								
GW-676	CR			X								

Table B.1 (continued)

Well	Regime [1]	Active Status Criteria			GWPP Sampling Frequency [3]	Monitoring Criteria						MAROS Evaluation [6]
		Reg. [2] Program	DOE Order	Hydro-logic		Contamination [4]					Unique Char. [5]	
						N	U	V	A	B		
GW-677	CR			X								
GW-678	CR			X								
GW-679	CR			X								
GW-680	CR			X								
GW-683	BC	C		X								
GW-684	BC	C		X								
GW-685	BC			X								
GW-686	EF		X	X	Semiannual			X				Review
GW-690	EF		X		Annual			X				Annual
GW-691	EF		X	X	Annual			X				Annual
GW-692	EF		X		Annual			X				Remove
GW-694	BC		X		Annual		X		X			Semiannual
GW-695	BC			X		X		X				
GW-698	EF		X		Semiannual	X		X				Semiannual
GW-700	EF		X		Annual			X				Annual
GW-703	BC		X		Annual	X		X		X		Annual
GW-704	BC	C				X		X				
GW-706	BC	C				X	X	X	X	X		
GW-709	CR	S		X								
GW-712	BC	R / C										
GW-713	BC	R / C		X								
GW-714	BC	R / C										
GW-715	BC			X								
GW-722	EF	C	X		Annual			X			WB (10)	
GW-724	BC		X		Annual	X		X				Annual
GW-725	BC		X		Annual	X		X				Annual
GW-726	BC		X		TBD (1)		X				WB (8)	-
GW-727	BC		X		TBD (1)						WB (10)	-
GW-729	BC		X		TBD (1)						WB (10)	-
GW-730	BC		X		TBD (1)						WB (8)	-
GW-731	CR	R		X								
GW-732	CR	R		X								
GW-733	EF	R / C		X				X				
GW-734	EF	C		X								
GW-735	EF	C	X	X	Odd						X	Biennial
GW-736	BC		X		TBD (4)	X	X	X				Review
GW-738	BC		X		Annual	X		X		X		Annual
GW-739	BC		X		TBD (4)			X				Review
GW-740	BC		X	X	Annual			X				Annual
GW-743	CR			X								
GW-744	EF	C	X		Annual						X	-
GW-746	EF			X								
GW-747	EF	C	X		Annual						X	-
GW-748	EF		X		Even						X	Biennial
GW-750	EF	C	X		Odd						X	Biennial
GW-752	EF			X								
GW-754	EF			X								
GW-756	EF			X								
GW-757	CR	S		X								
GW-759	EF			X								
GW-761	EF			X								
GW-762	EF	C						X				

Table B.1 (continued)

Well	Regime [1]	Active Status Criteria			GWPP Sampling Frequency [3]	Monitoring Criteria						MAROS Evaluation [6]
		Reg. [2] Program	DOE Order	Hydro-logic		Contamination [4]					Unique Char. [5]	
						N	U	V	A	B		
GW-763	EF	C	X	X	Annual			X				Annual
GW-765	EF		X	X	Odd						X	Biennial
GW-767	EF			X								
GW-769	EF		X		Semiannual			X				Semiannual
GW-770	EF		X	X	Semiannual			X				Semiannual
GW-774	EF			X								
GW-775	EF		X		Odd			X				Biennial
GW-776	EF		X	X	Odd						X	Biennial
GW-778	EF			X								
GW-779	EF		X		TBD (3)						X	Remove
GW-781	EF		X		Annual						X	Annual
GW-782	EF		X		Annual			X	X			Annual
GW-783	EF		X	X	Annual			X				Annual
GW-790	BC		X		TBD (1)						WB (10)	-
GW-791	EF		X		Annual			X				Annual
GW-792	EF		X	X	Annual			X				Annual
GW-795	BC			X								
GW-796	CR	R / S		X								
GW-797	CR	S / C		X								
GW-798	CR	S / C		X				X				
GW-799	CR	R / S		X								
GW-800	BC			X								
GW-801	CR	R / S		X								
GW-802	EF	C										
GW-816	EF		X	X	Annual						X	-
GW-820	EF		X		Semiannual			X				Semiannual
GW-827	CR	S		X								
GW-829	BC		X	X	Even	X						Annual
GW-831	CR	R		X								
GW-832	EF	C		*				X				
GW-835	BC	C		X			X	X				
GW-841	CR	C						X				
GW-842	CR	C										
GW-845	EF	C						X			PUMP	
GW-916	BC	C		X								
GW-917	BC	C		X								
GW-918	BC	C		X								
GW-920	BC	C										
GW-921	BC	C		X								
GW-922	BC	C		X								
GW-923	BC	C		X								
GW-924	BC	C		X								
GW-925	BC	C										
GW-926	BC	C										
GW-927	BC	C										
GW-934	EF		X		TBD (0)			X			WB(0)	-
GW-954	EF		X		Semiannual						BCAD(3)	-
GW-956	EF		X		Semiannual			X			BCAD(4)	-
GW-959	EF		X	X	Annual			X				
GW-960	EF		X	X	TBD (0)						X	-

Table B.1 (continued)

Notes:

1 Regime

BC = Bear Creek Hydrogeologic Regime
CR = Chestnut Ridge Hydrogeologic Regime
EF = Upper East Fork Poplar Creek Hydrogeologic Regime

2 Regulatory Program

C = CERCLA
C (wl) = CERCLA, water level monitoring only (East End VOC Plume Removal)
R = RCRA
R * = RCRA point-of-compliance well not currently sampled for RCRA monitoring
S = Solid Waste Disposal Facility

3 Sampling Frequency for the Y-12 GWPP, as determined from the MAROS recommendation and subsequent professional judgement.

even = Biennial sampling, during even years
odd = Biennial sampling, during odd years
TBD ( ) = To be determined; ( ) shows the number of samples collected from January 1996 through December 2006; wells with lower numbers have a higher sampling priority

4 Contamination: Indicates principal groundwater contaminant concentrations that exceed screening levels, listed in the following sequence.

N = Nitrate > 10 mg/L
V = VOCs > 5 μg/L, summed concentrations
U = Uranium > 0.03 mg/L
A = Gross Alpha Activity > 15 pCi/L
B = Gross Beta Activity > 50 pCi/L

5 Unique Characteristics

BCAD = Well equipped with Barcad™ system with number of discrete zones sampled
PUMP = Extraction well used for plume capture (East End VOC plume)
WB = Well equipped with Westbay™ multiport sampling equipment with number of discrete zones sampled
X = Selected because of location of monitoring well

6 MAROS Evaluation: recommended sampling frequency for wells selected for monitoring by the Y-12 GWPP.

- = Omitted from the MAROS evaluation, lack of data or listed as Regulated location (e.g., CERCLA).
Review = Additional information and/or professional judgment is required
Remove = Discontinue sampling

Table B.2. Groundwater monitoring wells that are granted inactive status under the Y-12 Groundwater Protection Program

Well	Regime [1]	Well	Regime [1]	Well	Regime [1]	Well	Regime [1]
53-1A	EF	GW-158	CR	GW-350	EF	GW-753	EF
54-2B	EF	GW-162	BC	GW-366	BC	GW-755	EF
55-1B	EF	GW-163	BC	GW-371	BC	GW-758	EF
55-1C	EF	GW-164	BC	GW-373	BC	GW-760	EF
56-7A	EF	GW-165	CR	GW-374	BC	GW-764	EF
58-2A	EF	GW-166	CR	GW-375	BC	GW-766	EF
59-1A	EF	GW-181	CR	GW-376	BC	GW-768	EF
59-1B	EF	GW-183	EF	GW-385	EF	GW-773	EF
59-1C	EF	GW-185	CR	GW-513	CR	GW-777	EF
60-1B	EF	GW-187	CR	GW-520	BC	GW-794	BC
CH-143	CR	GW-189	CR	GW-532	BC	GW-803	EF
CH-157	CR	GW-191	EF	GW-533	BC	GW-804	EF
CH-185	CR	GW-194	EF	GW-534	BC	GW-811	BC
CH-189	CR	GW-196	EF	GW-535	BC	GW-812	BC
GW-011	BC	GW-197	EF	GW-538	BC	GW-813	BC
GW-013	BC	GW-198	EF	GW-563	CR	GW-814	BC
GW-015	BC	GW-206	EF	GW-567	CR	GW-815	BC
GW-017	BC	GW-207	EF	GW-569	CR	GW-819	EF
GW-018	BC	GW-208	EF	GW-576	CR	GW-828	BC
GW-040	BC	GW-218	EF	GW-602	BC	GW-834	BC
GW-042	BC	GW-224	CR	GW-604	EF	GW-836	BC
GW-045	BC	GW-228	BC	GW-614	BC	GW-843	CR
GW-054	BC	GW-232	EF	GW-625	BC	GW-844	CR
GW-055	BC	GW-237	BC	GW-628	BC		
GW-056	BC	GW-239	EF	GW-631	EF		
GW-061	BC	GW-248	BC	GW-634	EF		
GW-062	BC	GW-250	BC	GW-636	BC		
GW-064	BC	GW-252	EF	GW-637	BC		
GW-066	BC	GW-258	BC	GW-640	BC		
GW-070	BC	GW-262	EF	GW-643	BC		
GW-073	BC	GW-264	EF	GW-647	BC		
GW-074	BC	GW-268	EF	GW-649	BC		
GW-081	BC	GW-271	EF	GW-651	BC		
GW-083	BC	GW-282	EF	GW-655	BC		
GW-094	BC	GW-283	EF	GW-657	EF		
GW-095	BC	GW-284	EF	GW-659	EF		
GW-096	BC	GW-285	EF	GW-673	CR		
GW-097A	BC	GW-286	BC	GW-681	CR		
GW-117	BC	GW-288	BC	GW-682	CR		
GW-118	BC	GW-290	BC	GW-688	EF		
GW-119	BC	GW-308	BC	GW-693	EF		
GW-120	BC	GW-311	BC	GW-696	EF		
GW-121	BC	GW-317	BC	GW-697	EF		
GW-123	BC	GW-318	CR	GW-699	EF		
GW-124	BC	GW-319	CR	GW-701	EF		
GW-125	BC	GW-324	BC	GW-702	EF		
GW-126	BC	GW-331	EF	GW-705	BC		
GW-131	EF	GW-333	EF	GW-710	BC		
GW-132	EF	GW-338	EF	GW-711	BC		
GW-133	BC	GW-342	BC	GW-723	BC		
GW-135	BC	GW-343	BC	GW-737	BC		
GW-146	CR	GW-344	BC	GW-742	CR		
GW-147	CR	GW-346	BC	GW-745	EF		
GW-150	EF	GW-348	BC	GW-751	EF		

Table B.2. (continued)

Notes:

1 Regime

BC = Bear Creek Hydrogeologic Regime
CR = Chestnut Ridge Hydrogeologic Regime
EF = Upper East Fork Poplar Creek Hydrogeologic Regime

Table B.3. Hydrologic monitoring wells in the Bear Creek Hydrogeologic Regime

Well	Functional Area [1]	Well	Functional Area [1]	Well	Functional Area [1]
GW-001	OLF	GW-229	OLF	GW-630	LD
GW-008	OLF	GW-236	S3	GW-638	OLF
GW-010	OLF	GW-242	BG	GW-641	BG
GW-012	OLF	GW-245	S3	GW-642	BG
GW-014	BG	GW-249	BG	GW-645	OLF
GW-016	BG	GW-257	BG	GW-646	OLF
GW-041	BG	GW-276	S3	GW-648	RS
GW-046	BG	GW-287	BG	GW-652	BG
GW-047	BG	GW-289	BG	GW-653	BG
GW-052	BG	GW-291	BG	GW-654	BG
GW-053	BG	GW-307	RS	GW-683	EXP-A
GW-057	EXP-A	GW-309	RS	GW-684	EXP-A
GW-059	BG	GW-310	RS	GW-685	EXP-A
GW-065	OLF	GW-316	SPI	GW-695	EXP-B
GW-069	BG	GW-323	SPI	GW-713	EXP-W
GW-078	BG	GW-325	S3	GW-715	EXP-W
GW-080	BG	GW-345	S3	GW-740	EXP-C
GW-082	BG	GW-347	S3	GW-795	AGLLSF
GW-084	OLF	GW-364	OLF	GW-800	OLF
GW-086	OLF	GW-370	BG	GW-829	OLF
GW-090	BG	GW-372	BG	GW-835	S3
GW-091	BG	GW-531	LD	GW-916	EMWMF
GW-097	OLF	GW-537	OLF	GW-917	EMWMF
GW-100	S3	GW-613	S3	GW-918	EMWMF
GW-101	S3	GW-621	EXP-B	GW-921	EMWMF
GW-115	S3	GW-622	BG	GW-922	EMWMF
GW-127	S3	GW-624	BG	GW-923	EMWMF
GW-226	OLF	GW-626	BG	GW-924	EMWMF
GW-227	OLF				

Notes:

1 AGLLSF = Above Ground Low Level Storage Facility
BG = Bear Creek Burial Grounds Waste Management Facility
EMWMF = Environmental Management Waste Management Facility
EXP-A = Exit Pathway Picket A
EXP-B = Exit Pathway Picket B
EXP-C = Exit Pathway Picket C
EXP-W = Exit Pathway Picket W
LD = Lysimeter Demonstration Site
OLF = Oil Landfarm Waste Management Area
RS = Rust Spoil Area
SPI = Spoil Area I
S3 = S-3 Site

Table B.4. Hydrologic monitoring wells in theUpper East Poplar Creek Hydrogeologic Regime

Well	Functional Area [1]	Well	Functional Area [1]	Well	Functional Area [1]
55-1A	Y12	GW-202	RDS	GW-734	EXP-J
55-3A	Y12	GW-204	T0134	GW-735	EXP-J
55-6A	Y12	GW-219	UOV	GW-746	GRIDK1
56-1A	Y12	GW-251	S2	GW-752	GRIDJ3
56-2A	Y12	GW-253	S2	GW-754	GRIDJ2
56-8A	Y12	GW-255	S2	GW-756	GRIDJ1
60-1A	Y12	GW-261	SY	GW-759	GRIDG1
GW-105	S3	GW-263	SY	GW-761	GRIDG2
GW-107	S3	GW-334	WC	GW-763	GRIDJ3
GW-108	S3	GW-335	WC	GW-765	GRIDE1
GW-148	NHP	GW-349	S2	GW-767	GRIDI2
GW-151	NHP	GW-380	NHP	GW-770	GRIDG3
GW-152	NHP	GW-383	NHP	GW-774	GRIDH2
GW-154	NHP	GW-603	EXP-J	GW-776	GRIDH3
GW-167	EXP	GW-605	EXP-I	GW-778	GRIDB2
GW-169	EXP-UV	GW-606	EXP-I	GW-783	GRIDE3
GW-192	B4	GW-617	EXP-E	GW-792	GRIDD2
GW-193	T2331	GW-619	FTF	GW-816	EXP-SR
GW-195	B4	GW-686	CPT	GW-959	B9201-2
GW-199	GRIDI1	GW-691	CPT	GW-960	GRIDF2
GW-200	RDS	GW-733	EXP-J		

Notes:

1
B4 = Beta-4 Security Pits
B9201-2 = Building 9201-2
CPT = Coal Pile Trench
EXP-E = Exit Pathway Picket E
EXP-I = Exit Pathway Picket I
EXP-J = Exit Pathway Picket J
EXP-SR = Exit Pathway (Scarboro Road)
EXP-UV = Exit Pathway (Union Valley)
FTF = Fire Training Facility
GRID = Comprehensive Monitoring Plan Grid Location
NHP = New Hope Pond
RDS = Ravine Disposal Site
S2 = S-2 Site
S3 = S-3 Site
SY = Y-12 Salvage Yard
T0134 = Tank 0134-U
T2331 = Tank 2331-U
UOV = Uranium Oxide Vault
WC = Waste Coolant Processing Area
Y12 = Y-12 Complex

Table B.5. Hydrologic monitoring wells in the Chestnut Ridge Hydrogeologic Regime

Well	Functional Area [1]	Well	Functional Area [1]	Well	Functional Area [1]
1082	ORSF	GW-241	CRSDB	GW-562	CDLVII
1084	ORSF	GW-292	ECRWP	GW-564	CDLVII
1090	UNCS	GW-298	CRBAWP	GW-608	CRSP
GW-141	LIV	GW-299	CRBAWP	GW-609	CRSP
GW-142	KHQ	GW-300	CRBAWP	GW-610	CRSP
GW-144	KHQ	GW-301	CRBAWP	GW-611	CRSP
GW-145	KHQ	GW-302	UNCS	GW-612	CRSP
GW-156	CRSDB	GW-303	CRSDB	GW-674	FCAP
GW-159	CRSDB	GW-304	CRSDB	GW-676	FCAP
GW-160	CRBAWP	GW-305	LIV	GW-677	FCAP
GW-173	CRSP	GW-322	CRSP	GW-678	FCAP
GW-174	CRSP	GW-339	UNCS	GW-679	FCAP
GW-175	CRSP	GW-511	CRSP	GW-680	FCAP
GW-176	CRSP	GW-512	FCAP	GW-709	LII
GW-177	CRSP	GW-521	LIV	GW-731	CRSDB
GW-178	CRSP	GW-522	LIV	GW-732	CRSDB
GW-179	CRSP	GW-539	LII	GW-743	CRSP
GW-180	CRSP	GW-541	CDLVI	GW-757	LII
GW-184	RQ	GW-542	CDLVI	GW-796	LV
GW-186	RQ	GW-543	CDLVI	GW-797	LV
GW-188	RQ	GW-544	CDLVI	GW-798	CDLVII
GW-203	UNCS	GW-546	CDLVI	GW-799	LV
GW-205	UNCS	GW-557	LV	GW-801	LV
GW-217	LIV	GW-558	SSCR	GW-827	CDLVI
GW-221	UNCS	GW-559	SSCR	GW-831	FCAP
GW-231	KHQ	GW-560	CDLVII		

Notes:

1 CDLVI = Construction/Demolition Landfill VI
CDLVII = Construction/Demolition Landfill VII
CRBAWP = Chestnut Ridge Borrow Area Waste Pile
CRSDB = Chestnut Ridge Sediment Disposal Basin
CRSP = Chestnut Ridge Security Pits
ECRWP = East Chestnut Ridge Waste Pile
FCAP = Filled Coal Ash Pond
KHQ = Kerr Hollow Quarry
LII = Sanitary Landfill II
LIV = Industrial Landfill IV
LV = Industrial Landfill V
ORSF = Oak Ridge Sludge Farm
RQ = Rogers Quarry
SSCR = South Side of Chestnut Ridge
UNCS = United Nuclear Corporation Site

APPENDIX C

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(if issued)

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